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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,323	05/04/2006	Masashi Takada	31869-230501	5758

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EXAMINER

ISLAM, MOHAMMAD K

ART UNIT	PAPER NUMBER
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2614

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,323	Applicant(s) TAKADA, MASASHI	
	Examiner MOHAMMAD K. ISLAM	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/4/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 3, 7, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 3 discloses “calculating the average value of the filter coefficients during a prescribed period in the past in order to obtain an offset component,” and the corresponding section of the description sets forth calculation equation (8).

The disclosures in question can be considered to signify that for each of the M-number of tap coefficients, the average of the tap coefficients during prescribed period in the past is calculated (refer to the second term on the right side of formula (8)) and then the calculated average is subtracted from said tap coefficient in order to obtain a new tap coefficient.

However, when equation (8) is actually calculated, Each tap coefficient $[h(k+1, m)]$ at time $k+1$ is substantially 0. This is because the impulse response of the unknown transmission path to be adapted is presumed to be substantially

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invariable relative to time, as should be apparent with consideration of common technical knowledge. Therefore, the low frequency offset components that are the focus of the invention set forth in the present application will not change significantly relative to the sampling time interval, and thus the average value of the past tap coefficient at an arbitrary (m) is thought to be substantially the same as the current tap coefficient.

Consequently, calculating equation (8) will cause all of the tap coefficients to be set to a value of approximately 0, which would significantly degrade the adaptive operations of the filter.

Such being the case, applying the operation set forth in claim 3 and formula (8) will make it impossible for an echo canceller to impart the effect that it is intended to impart, and thus it is impossible to rationally understand the technical significance of the operation in question. Consequently, it is impossible to express a meaningful opinion in relation to the novelty, the inventive step or the industrial applicability of claim 3.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1,2, 4-6, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gao et al. (US Pat. No. 6876751 B1) in view of He et al. (US Pub No. 2004/0001450 A1).

Regarding Claim 1, 2, 4-6, Gao discloses that while suppressing acoustic feedback in a hearing aid by mean of an adaptive filter (abstract), the DC offset is estimated by averaging the filter coefficients of the adaptive filter and then the estimated DC offset is removed from the filter coefficient and in order to prevent

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the DC offset from building up in the adaptive filter coefficients. The removal of the DC offset is carried out at predetermined intervals (specifically presents an interval of every 256 samples). (Col 11, lines 65-67, Col 12, lines 1-62)

However, Gao does not disclose that the offset component is suppressed depending on whether or not low frequency components with a frequency lower than a predetermined frequency are present in the far-end input signal or the near-end input signal.

He discloses an echo canceller system with a near end input low frequency filters 45, 49, in fig.2 to remove unwanted DC components. (Fig.2, [0027])

Therefore it would have been obvious to one of ordinary skill in the art at the time of this application to implement filters to eliminate depending on low frequency components with a frequency lower than a predetermined frequency are present in the far-end input signal or the near-end input signal to produce an estimate of the received echo.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 5940499 A, Voice switch used in hands-free communications system

US 6816591 B2, Voice switching system and voice switching method

US 6901143 B1, Voice switching system capable of improving a quality of conversation

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US 6408070 B2, Method and apparatus for echo control in a communication system

US 20070092074 A1, Echo canceller

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad K. Islam whose telephone number is 571-270-5878. The examiner can normally be reached on Monday-Friday: 6:30AM -5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tsang Fan can be reached on 571-27-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mohammad Islam/
Patent Examiner
Art Unit: 2614

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/Fan Tsang/
Supervisory Patent Examiner, Art Unit 2614